

Annual performance report for: Margam Green Energy Limited

Permit Number: EPR/DP3137EG

Year: 2022

This report is required under the Industrial Emissions Directive's Article 55(2) requirements on reporting and public information on waste incineration plants and co-incineration plants, which require the operator to produce an annual report on the functioning and monitoring of the plant and make it available to the public.

1. Introduction

Name and address of plant	Margam Green Energy Limited, Land Off Longlands Lane, (Heol Cae'r Bont) Margam, Port Talbot, Neath Port Talbot SA12 2NU
Description of waste input	Waste wood- Biomass 19 12 07
Operator contact details if members of the public have any questions	General Manager 01639 508 810

2. Plant description

Margam Green Energy consists of a biomass-fuelled electricity generating station located in Margam, Port Talbot. The plant consists of a single boiler that combusts non-hazardous biomass fuel to produce steam. The biomass fuel consists of waste wood sourced from commercial, industrial, construction and demolition waste streams. The biomass fuel is delivered to the site in the form of pre-processed wood chips. The plant can process up to 335,000 tonnes per annum of biomass fuel.

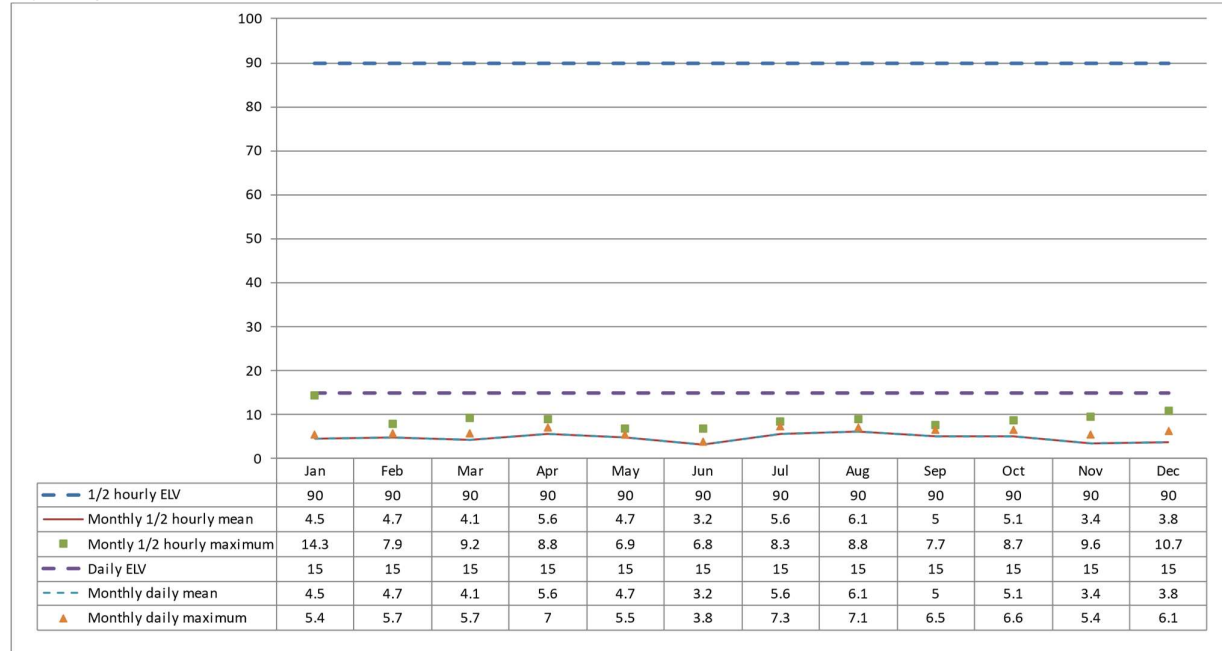
3. Summary of Plant Operation	
Waste wood (biomass) received	233,952 tonnes
Total waste received	233,952 tonnes
Total plant operational hours	6575.5 hours
Total hours of “abnormal operation” (see permit for definition)	0 hours
Total quantity of incinerator bottom ash (IBA) produced	12,484 tonnes
Disposal or recovery route for IBA	D05.03 Hazardous waste landfill 01/01/2022 - 22/03/2022 D05.02 Non-hazardous waste landfill 23/03/2022 – 31/12/2022
Did any batches of IBA test as hazardous? If yes, state quantity	1 sample categorised as hazardous.
Total quantity of air pollution control (APC) residues produced	2,992 tonnes
Disposal or recovery route for APC residues	D05.03 Hazardous waste landfill
Total electricity generated for export to the National Grid	242,054 MWh

4. Summary of Plant Emissions

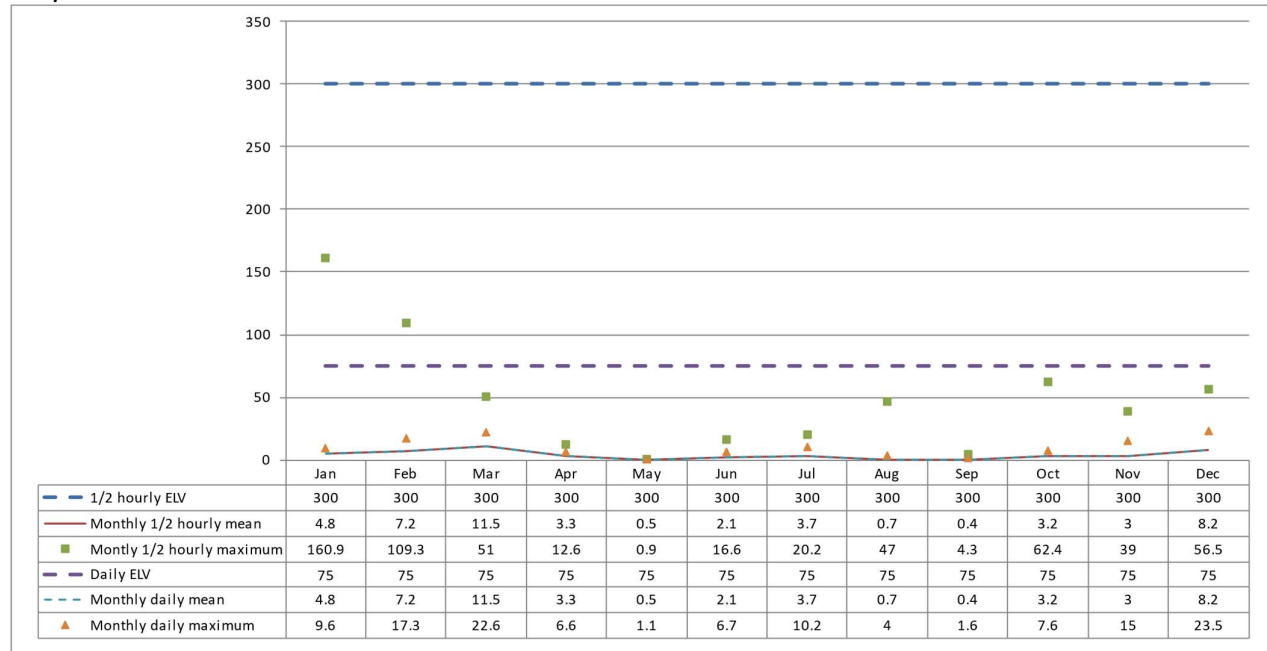
4.1 Summary of continuous emissions monitoring results for emissions to air

The following charts show the performance of the plant against its emission limit values (ELVs) for substances that are continuously monitored.

Hydrogen chloride HCL



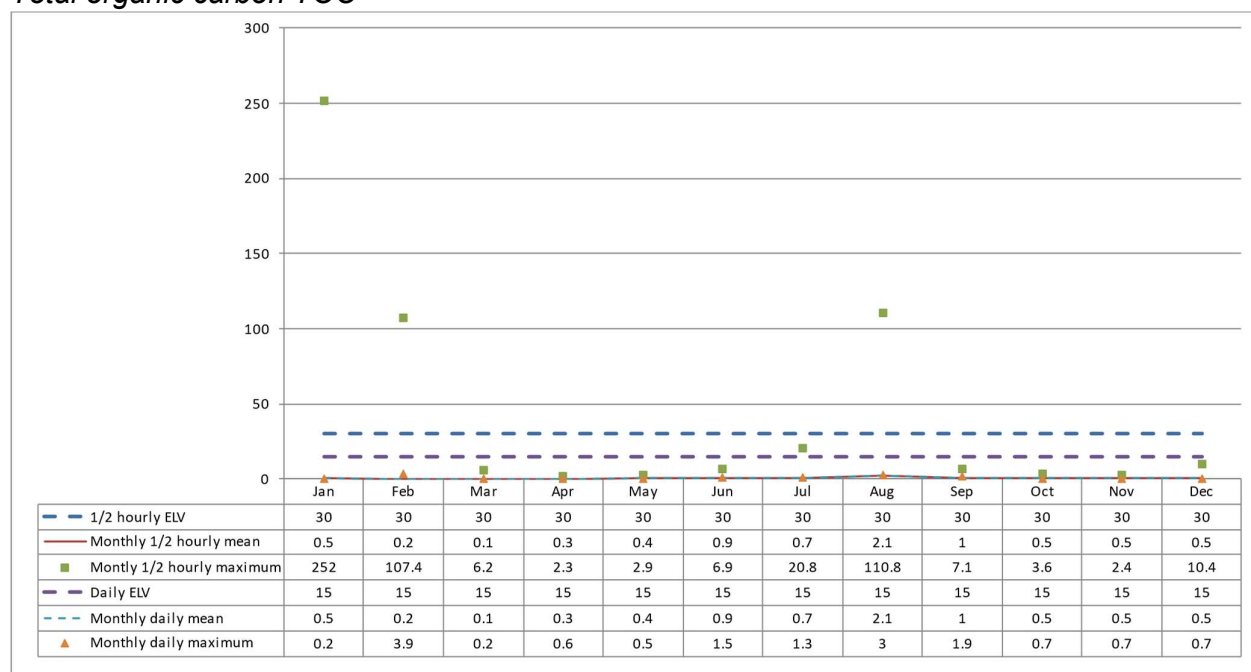
Sulphur dioxide SO2



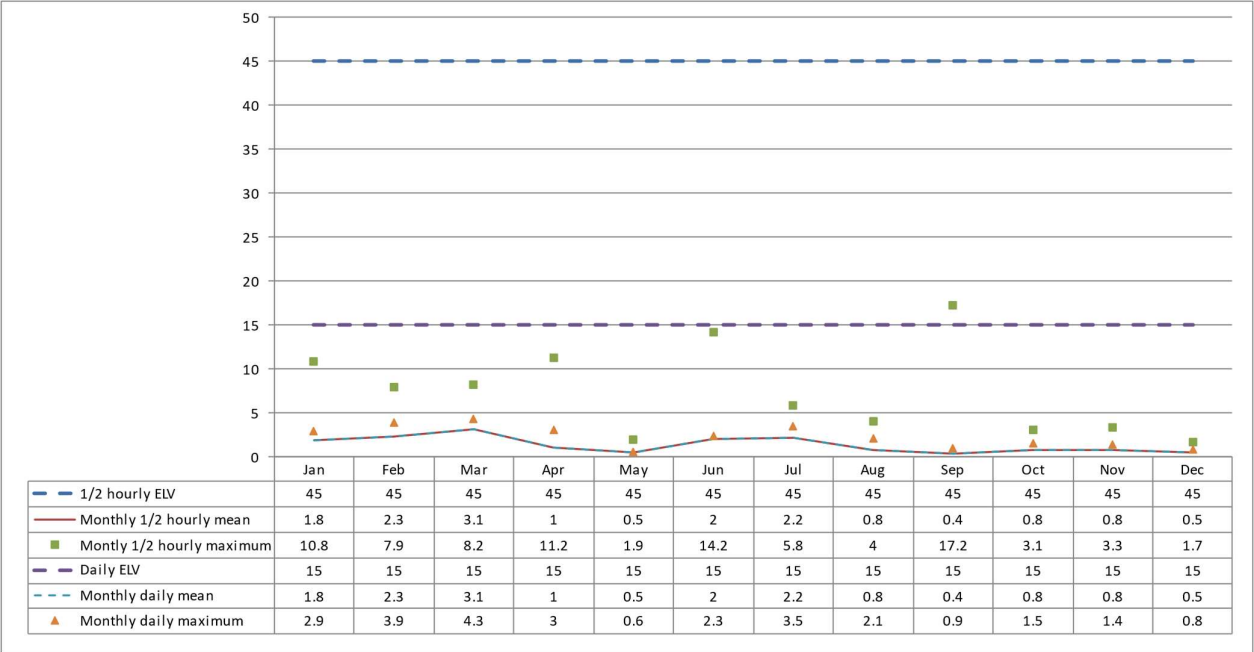
Oxides of nitrogen NOx



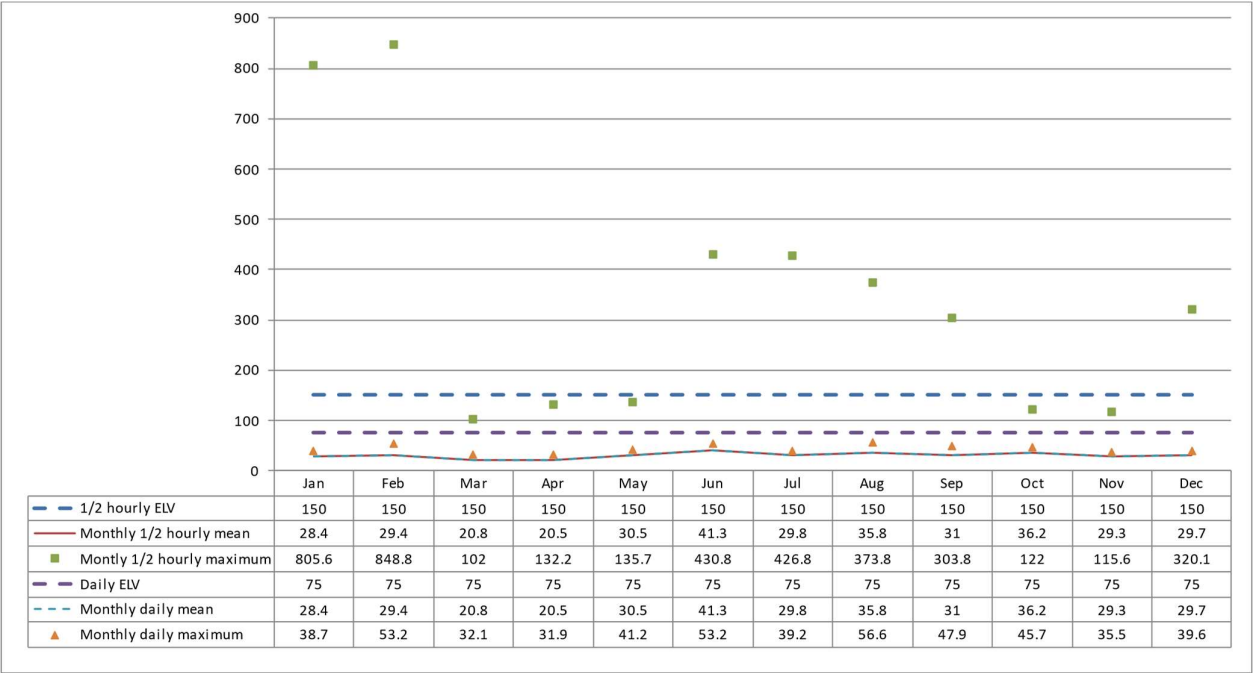
Total organic carbon TOC



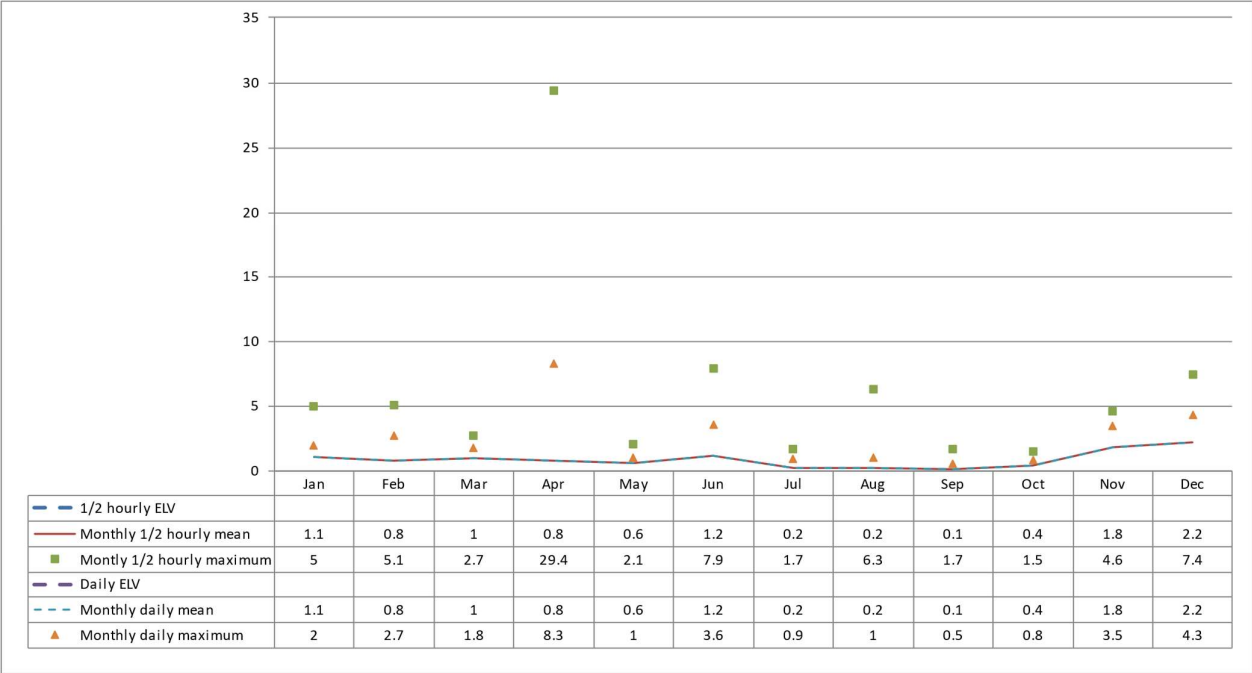
Particulates



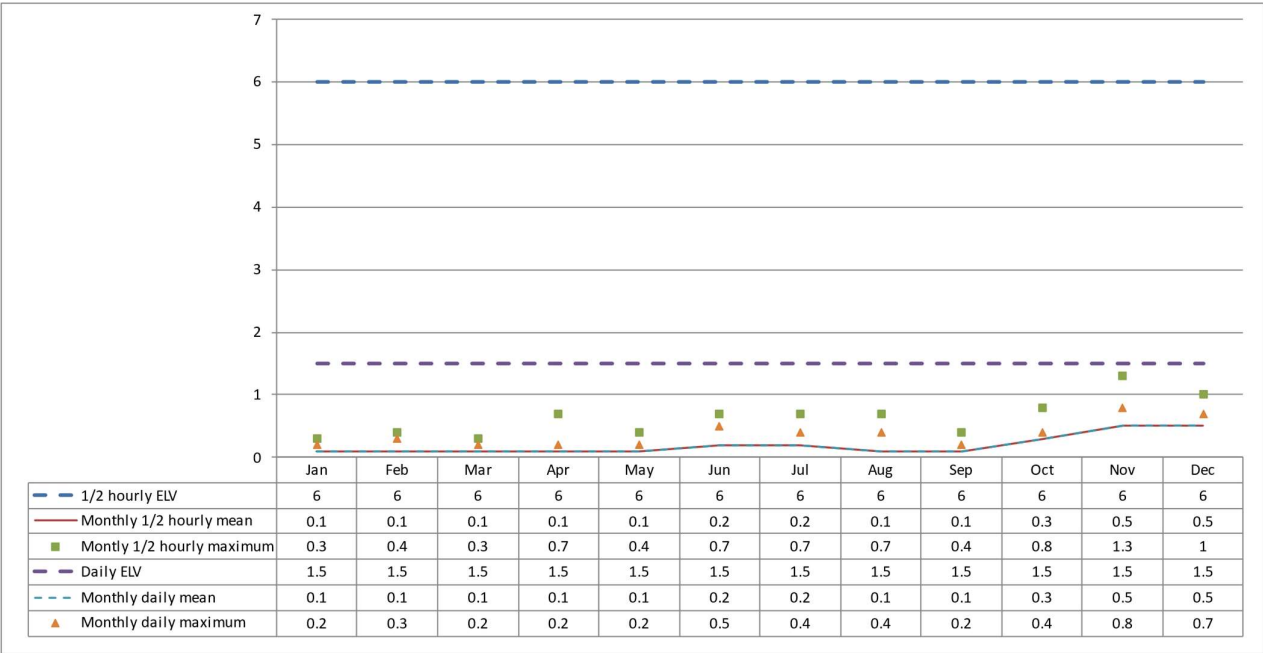
Carbon monoxide CO



Ammonia NH3



Hydrogen fluoride HF



4.2 Summary of periodic monitoring results for emissions to air

The table below shows the results of periodically monitored substances.

Substance	Emission limit value	Results	
		24 th August 2022	December 2022
Mercury and its compounds	0.05 mg/m ³	0.0023 mg/m ³	Awaiting Results
Cadmium & thallium and their compounds (total)	0.05 mg/m ³	0.0008 mg/m ³	Awaiting Results
Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	0.5 mg/m ³	0.0291 mg/m ³	Awaiting Results
Dioxins and furans (I-TEQ)	0.1 ng/m ³	0.1261 ng/m ³	Awaiting Results

5. Summary of Permit Compliance

5.1 Summary of any notifications or non-compliances under the permit

Date	Summary of notification or non-compliance	Reason	Measures taken to prevent reoccurrence
22/02/2022	20/02/2022 1hr breach CO & TOC between 18:59 & 19:59	Plant went into Island mode due to high winds causing loss of WPD network in local area	None possible at plant level, National Grid have since identified and rectified issues on the network to prevent recurrence.
21/06/2022	20/06/2022 30min CO breach between 14:29 & 14:59	Standby oxygen sensor was put into manual in error during plant maintenance. This resulted in the plant control system, incorrectly believing the oxygen levels in the boiler were wrong. This resulted in an automatic fan trip which caused the exceedance.	Maintenance team training conducted to inform them of the correct procedure for maintaining O2 analysers when plant maintenance is conducted with the plant operational.
10/08/2022	09/08/2022 30 min CO & TOC Breach between 18:59-19:29	During plant start up a short term gap appeared on the fuel	Operator has checked and verified operating procedures require

		covering over the combustion grate. This led to the short term exceedance	grate to be fully covered as part of start up. Toolbox talks given to operations team to reinforce the process of starting the plant.
15/08/2022	14/08/2022 30 min CO & TOC Breach between 17:29-17:59	Plant trip was due to a control system communication issue. Which resulted in automatic protective trip on the main turbine.	Extensive investigations performed on plant control systems and fault could not be replicated.
22/08/2022	20/8/22 30 min CO breach between 12:59-13:29	Issue was a result of a temporary issue with the combustion grate, due to a stiction event	Issue was temporary in nature and has since been resolved.
25/08/2022	24/8/22 30 min CO breach between 14:59-15:29 & CO Breach between 17:59-18:29	Excessive air ingress to boiler.	Source of air ingress identified and engineering modifications made to rectify.
26/08/2022	25/8/22 30 min CO breach between 15:59-16:29	Excessive air ingress to boiler.	Source of air ingress identified and engineering modifications made to rectify.
05/09/2022	02/09/2022 30 min CO breach between 01:29-01:59	Excessive air ingress to boiler.	Source of air ingress identified and engineering modifications made to rectify.
12/09/2022	11/09/2022 30 min CO breach 10:59-11:29	Excessive air ingress to boiler.	Source of air ingress identified and engineering modifications made to rectify.
12/09/2022	11/09/2022 30 min CO breach 14:59-15:29	Excessive air ingress to boiler.	Source of air ingress identified and engineering modifications made to rectify.
29/09/2022	28/09/2022 30 min CO breach 10:59-11:29	Excessive air ingress to boiler.	Source of air ingress identified and engineering modifications made to rectify.
12/12/2022	09/12/2022 30 min CO breach 04:59-05:29	During normal plant operation, freezing weather caused an outside situated pressure transmitter to	Measures taken to reduce the exposure of plant apparatus during cold weather. Further work planned to improve

		freeze. As an effect of this, the feedwater tank level dropped and the turbine tripped, this event caused a temporary spike in CO.	resilience to cold weather.
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5.2 Summary of any complaints received and actions to taken to resolve them.

Date of complaint	Summary of complaint	Reason for complaint including whether substantiated by the operator or the EA	If substantiated, measures to prevent reoccurrence
	None		

6. Summary of plant improvements

Summary of any permit improvement conditions that have been completed within the year and the resulting environmental benefits.
None
Summary of any changes to the plant or operating techniques which required a variation to the permit and a summary of the resulting environmental impact.
None
Summary of any other improvements made to the plant or planned to be made and a summary of the resulting environmental benefits.

Ash Reinjection and Grate Damper currently being installed.